

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions or listings of claims for this application.

Listing of Claims:

Claims 1-30 (Cancelled).

31. (Currently amended) A non-volatile resistance variable device comprising:

a substrate ~~having~~ having a first electrode formed thereover;

a resistance variable chalcogenide comprising material having metal ions diffused therein received operatively adjacent the first electrode, the chalcogenide material comprising A_xB_y , where "B" is selected from the group consisting of S, Se and Te and mixtures thereof, and where "A" comprises at least one element which is selected from Group 13, Group 14, Group 15, or Group 17 of the periodic table;

a second electrode received operatively adjacent the resistance variable chalcogenide comprising material; and

the second electrode and resistance variable chalcogenide comprising material operatively connecting at an interface, the chalcogenide comprising material having a first region which is displaced from the interface at least by a chalcogenide material interface region having a higher content of "A" than the first region.

32. (Original) The device of claim 31 wherein "A" comprises Ge or Si.

33. (Original) The device of claim 31 wherein "A" comprises Ge.

34. (Original) The device of claim 31 wherein "A" comprises Ge, and "B" comprises Se.

35. (Original) The device of claim 31 wherein "A" comprises Ge, "B" comprises Se, and the metal ions comprise Ag.

36. (Currently amended) The device of claim 31 wherein the interface ~~regio~~
region has a thickness of less than or equal to 100 Angstroms.

37. (Original) The device of claim 31 wherein the interface region has a thickness of greater than or equal to 10 Angstroms.

38. (Original) The device of claim 31 wherein the interface region has a thickness of less than or equal to 100 Angstroms and greater than or equal to 10 Angstroms.

39. (Original) The device of claim 31 wherein the interface region is substantially homogenous.

40. (Original) The device of claim 31 wherein the interface and first regions have substantially the same concentration of the metal.

41. (Original) The device of claim 31 wherein the interface region is substantially homogenous, and the interface and first regions have substantially the same concentration of the metal.

42. (Original) The device of claim 31 wherein the second electrode material predominately comprises elemental silver.